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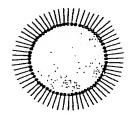
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Figure 1









Key:

Alkythiol Oligonucletide



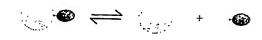
Gold Nanoparticle



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Figure 2

A) Dissociation of a monovalent NPC



$$K_d = \frac{\left[\begin{array}{c} \\ \end{array} \right] \left[\begin{array}{c} \\ \end{array} \right]}{\left[\begin{array}{c} \\ \end{array} \right]}$$

B) Dissociation of a multivalent NPC

Where K_t << K_d

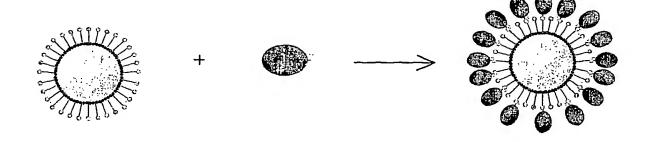
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Figure 3

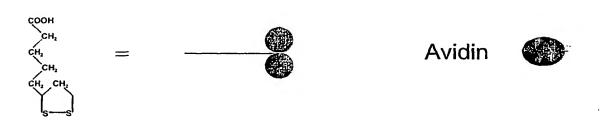
A) Divalent conjugation



B) Covalent attachment of binding molecules



Key:



Gold Nanoparticle



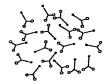
$$\begin{array}{c|c} & \mathsf{NH_2} \\ & \mathsf{CH_2} \\ & \mathsf{C} = \mathsf{O} \\ & \mathsf{N} \\ & \mathsf{C} \\ & \mathsf{CH_2} \\ & \mathsf{SH} \\ & \mathsf{SH} \end{array}$$

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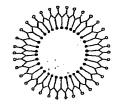
Figure 5

A) Monovalent conjugation

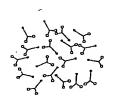


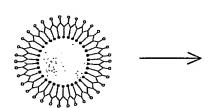
3

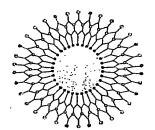




B) Polymerization (entrapment) and functionalization

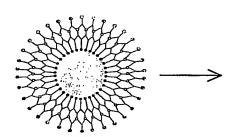


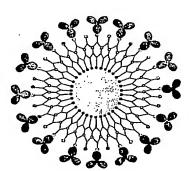




C) Covalent attachment of binding molecules







Key:

Mercaptopropyltrimethoxy Silane



Gold Nanoparticle



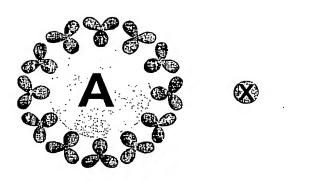
Aminopropyltrimethoxy Silane



Antibody



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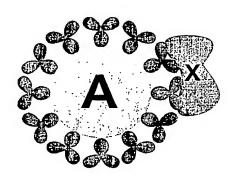




Figure 8

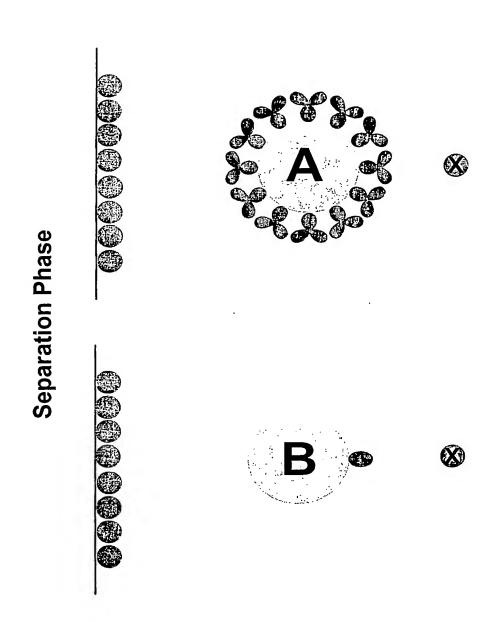
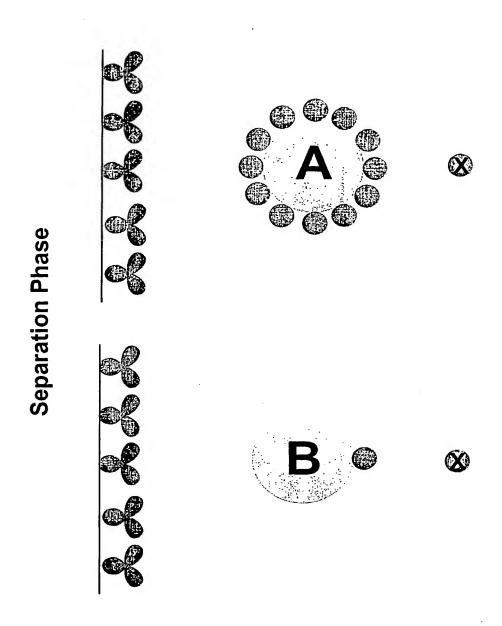


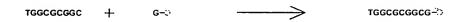
Figure 9



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Figure 10

1) Activation



2) Substitution

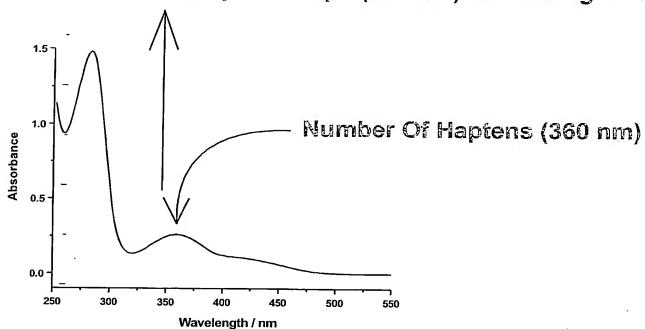
3) Self Assembly



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Figure 11

Number Of Mercapto Groups (343 nm) On Adding DTT



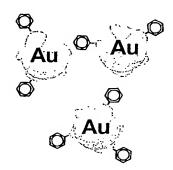
Haptenylated Pyrdyldithiodextran (A Protected Mercaptodextran)

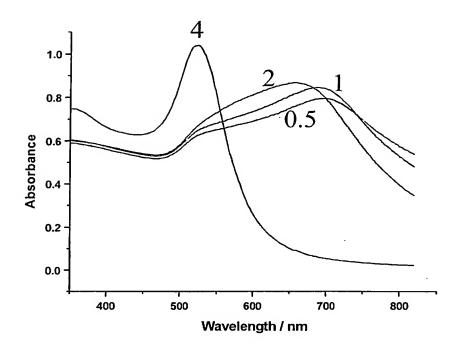
Haptenylated Mercaptodextran

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Figure 13

Haptenylated Mercaptodextrans





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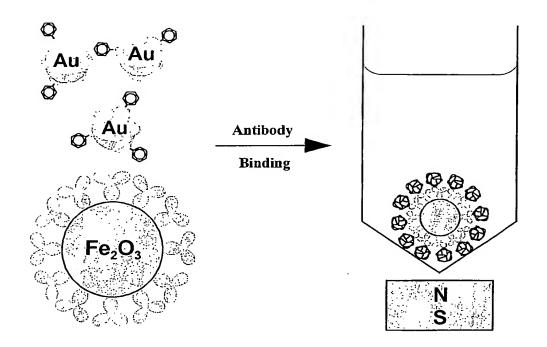
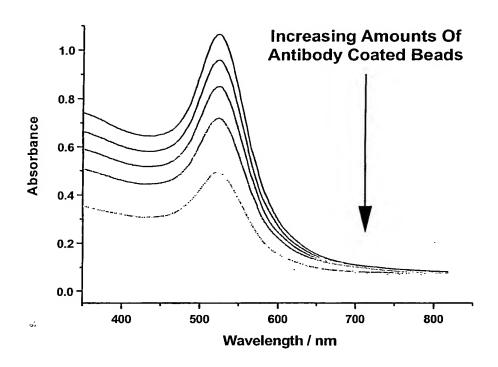


Figure 16

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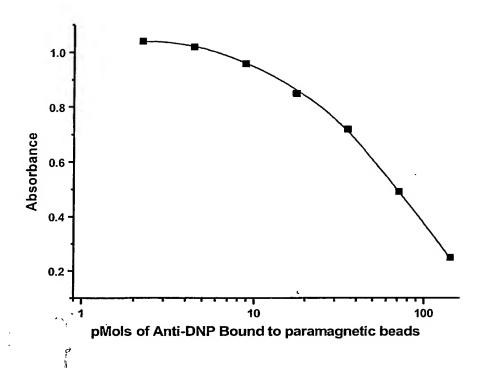
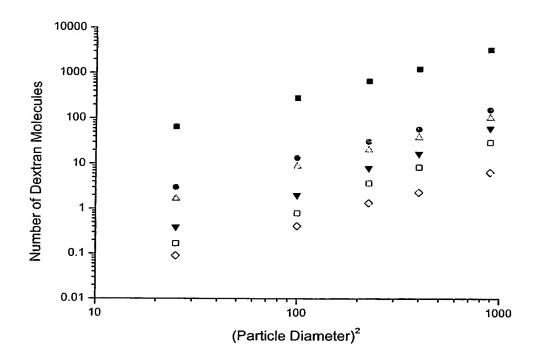


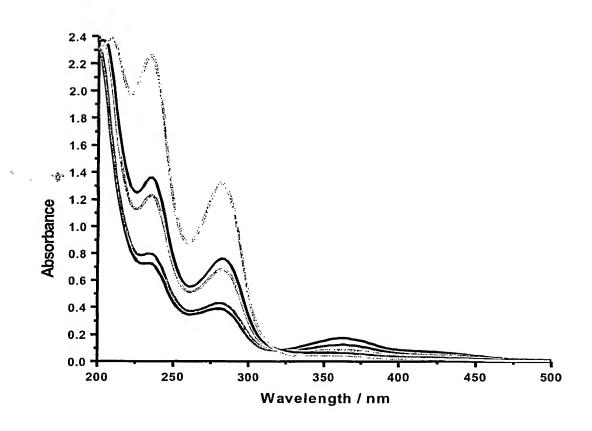
Figure 18



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Figure 19



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Figure 20

Relative Particle Concentration

		1.4	0.7	0.35
Hatptens per Particle	12			
	8.6			
	5.9		(NO)	
	4.4			
	1.2			Za.

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Figure 21

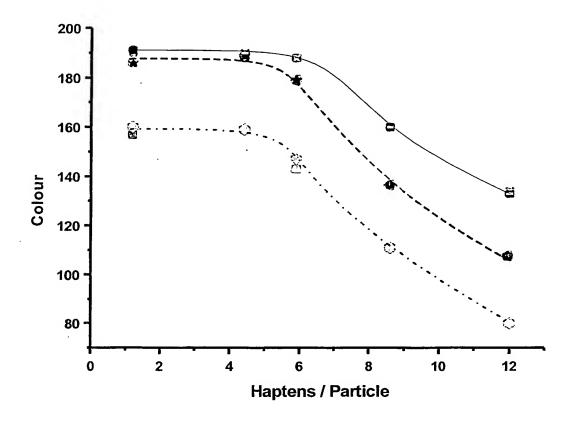


Figure 22

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Figure 23

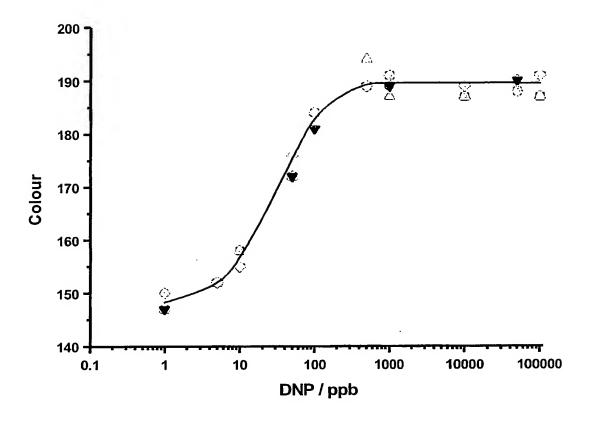
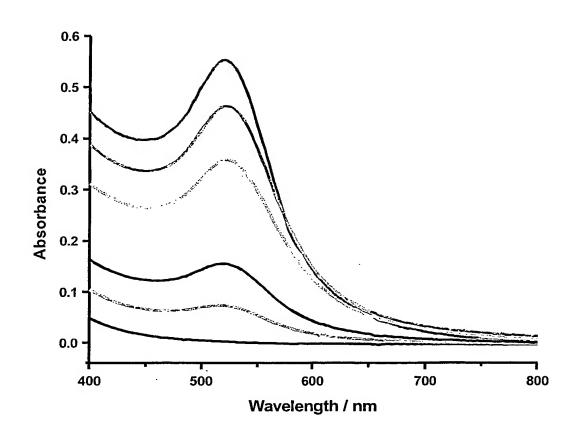


Figure 24



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Figure 25

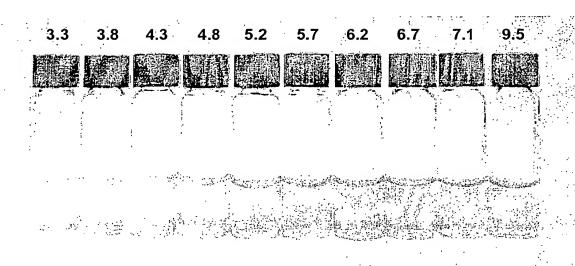
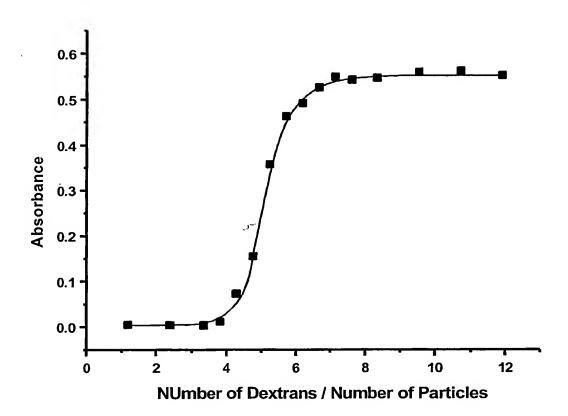


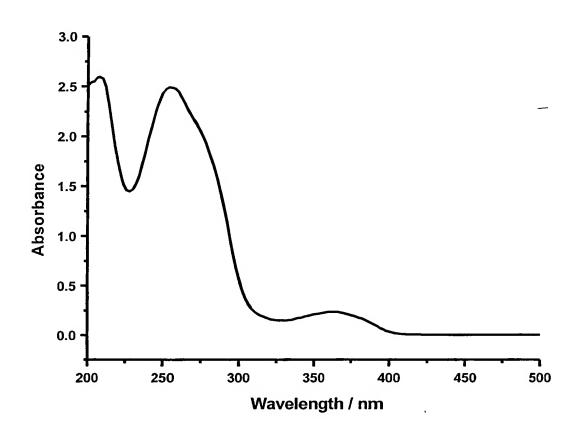
Figure 26



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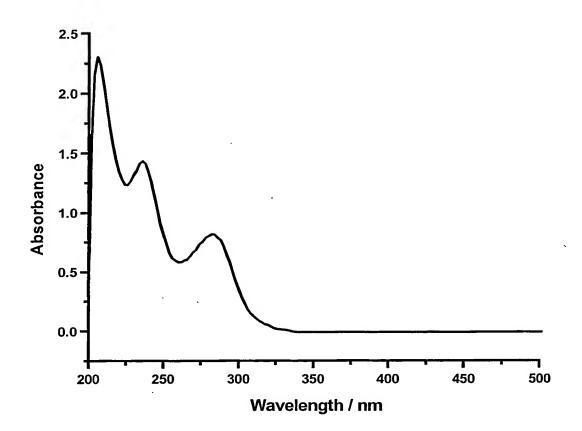
Figure 27



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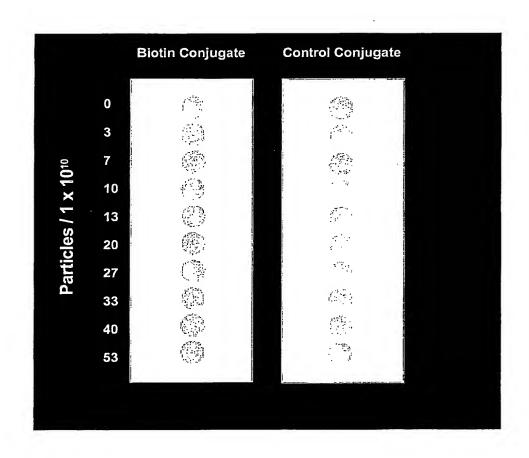
200		
100		
50		
25		
10		
5	1 (p) 2 (p) 3) 32	
2.5		
1		
0.5		
0	٠.	

Figure 30



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Figure 32



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Figure 33

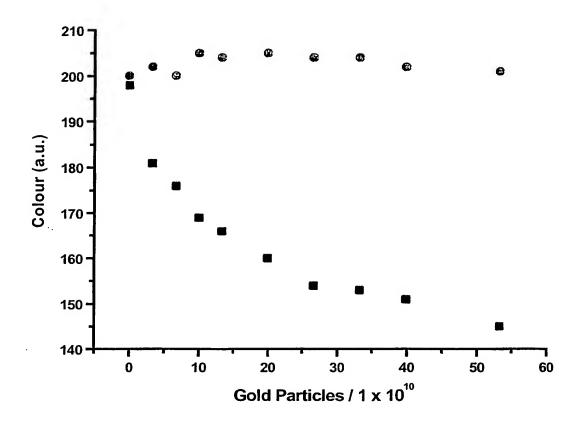
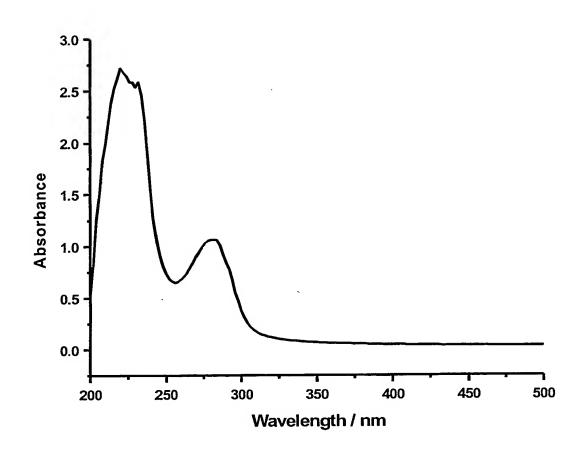


Figure 34



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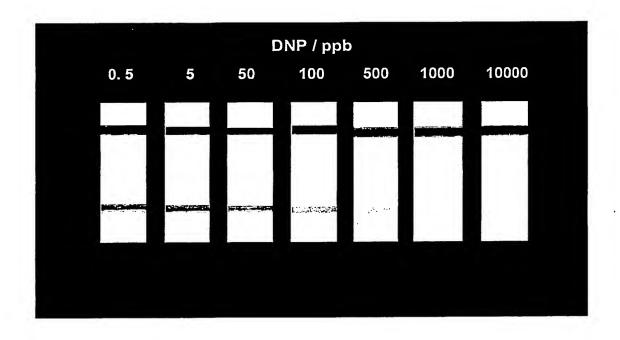


Figure 37

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Figure 38